



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

July 25, 1991

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: What Constitutes the Portion of the Underground Tank that
"Routinely Contains Product"

FROM: Dave O'Brien, Chief /s/
Technical Standards Branch
Office of Underground Storage Tanks

TO: Leslie Zawacki, Acting Program Manager
Region VIII UST Program

It has recently Come to my attention that a regulatory interpretation memo (copy attached) was provided to you by this Office on June 26, 1991 concerning the issue of whether an in-tank monitor may be used as a "precision-test" and would suffice for the purpose of complying with requirements for the initial tightness test mandated at all new UST installations. The conclusion reached about that issue in the earlier memo is correct for use as guidance at the time of installation: an in-tank monitor, when set in the test mode meets the new tank installation requirement for performing a precision test if it achieves the 0.05 gals/hour NFPA standard and tests all portions of the UST system up to the level of the tank's interior that is immediately below where the overfill prevention equipment would be triggered. Unfortunately, some of the rationale provided in support of this interpretation was incorrect and inadvertently raised another issue that is at the heart of the release detection regulation. The following additional discussion is therefore provided primarily to clarify this other issue: for purposes Of EPA leak detection requirements what constitutes the portion of the tank that routinely contains product?

The phrase "routinely contains product" is used in the regulations to describe that portion of the tank system that at a minimum must be covered by the release detection method used. This language was added to the final rule primarily to implement EPA's stated intent to allow the use of numerous methods of detection to meet our leak detection requirements, such as Partially-filled in-tank level sensors, statistical inventory reconciliation (SIR) services, and non-volumetric methods (e.g., in-tank acoustic

testing or tracer techniques). Our findings from EPA's causes of releases studies done in support of the final regulation revealed that even old bare steel tanks (the worst case scenario) only rarely, if ever, leak in the top third of the tank (except at the bungs and fittings on the tank top which are the target of the overfill prevention requirements). Therefore, EPA has determined it is protective of human health and the environment to be somewhat flexible about what portion of the upper part of the tank must be tested so that UST owners and operators can take full advantage of the different types of release detection available in the marketplace.

The "routinely contains product" language fosters the use of several different methods of release detection in basically two ways. First, it makes clear that detection methods can be used that do not test the vent pipes, fill pipes, and fittings on top of the tank--EPA has mandated that these areas in the future do not "routinely" contain product through compliance with the overfill prevention requirements. As a general engineering approach EPA decided it was preferable to prevent product from getting to those upper portions of the tank system rather than trying to prevent leaks at the tank's top by making sure that the fittings continue to remain tight over the tank's operating life. Second, the language also provides some flexibility as to what portion of the tank vessel below the fittings must be checked by the leak detection method used. Because different detection methods operate on different principles and have different capabilities, we did not want to unnecessarily restrict release detection to only those methods that always test the complete tank shell's integrity. We certainly did not intend to restrict tightness testing to only those methods that test the integrity of the shell up to the level of the overfill prevention triggering device (as was incorrectly stated in the June 26 memo).

The following are some simple "rules of thumb" to use in determining whether the portion of the tank that "routinely contains product" has been adequately tested by the release detection method used:

- (1) With some non-volumetric test methods, the level of the product in the tank does not impact the release detection method's performance capabilities. Thus, for purposes of EPA's regulation, the level of liquid in the tank vessel at the time of the test is not of concern, (for example, acoustical methods and statistical inventory reconciliation services (SIR)).

- (2) For automative tank gauging equipment, the liquid level in

the tank at the time of the test must be appropriate for the method to be able to detect the required minimum leak rate with a probability of detection of 0.95 and a probability of false alarm of 0.05. Particularly in larger tanks, the further down the liquid level is at the time of the ATG's test the more difficult it is to achieve the required performance standard. (Any in-tank level monitoring method installed after 12/22/90 must be backed up by an evaluation of that method's performance following EPA's evaluation protocol and the results of the evaluations should specify any limitations of the use of the method including the level at which the required leak rate performance was achieved on the test tank.

(3) The major in-tank level monitoring service providers most often specify in the methods' stated protocols that their practice is to test almost the complete integrity of the tank, including up very near to the top of the tank (85% to 95% full). This is considered by EPA as meeting the "routinely contains product" provision in the regulations.

(4) At the time of final rulemaking EPA was also aware of numerous small businesses (with low levels of product sales) who were reported to purposefully maintain low product inventory levels as part of their normal business routine. Therefore, EPA concluded that it is unduly restrictive to limit test methods to only those approaches that test nearly the complete tank's integrity (and would require a small business owner to order an unusually high volume of product to assure testing of the upper portions of the tank that would otherwise rarely ever be called upon to store product). In these types of situations, when an on-site inspection is conducted, the inspector might include a quick check of the required inventory records to determine if in fact the tank is routinely being filled (i.e., not just on a rare occasion) significantly above the liquid level at which the tank test was conducted.

cc: OUST Management Team
Desk Office Team